

# Product application for sterile technology

## Production line for eye ointment



GEMÜ® Marketing-Services  
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### Application

When manufacturing eye ointment, it is imperative to ensure that the product which consists of several components is mixed optimally and, above all, that it is sterile. For this purpose, it includes a vacuum process system including two sequentially switched mixing tanks with speed controlled agitators. Their task is to mix the fully automated inflowing components gently at constant pressure and to emulsify them. In order to avoid boundary layers during the mixing process and to guarantee constant and even consistency, the heterogeneous mixture at the exposed location is withdrawn from the pre-mixer and fed into the final mixer via a sophisticated pipe system. It is thus ensured that no concentration gradients occur and that the eye ointment has constant high quality. After preparation is complete, the eye ointment is passed on to storage containers.

### Plant design

The means of controlling the media via multi-port valve blocks was selected for feeding the components in the bypass pipe system and for removal of the final product. Just as this, cleaning and sterilisation of the production line is also integrated in the compact valves' function. This means that unnecessary and critical distances between the individual valves can be avoided and welding joints saved. The compact construction style also

ensures shorter off-duty periods for the system. A further special feature is the fully automatic control/monitoring using field bus supported valve technology.

### Solution

All valve functions are combined in compact blocks (GEMÜ-M600). Based on diaphragm valves, the valve blocks are already individually adapted to meet all requirements during the preliminary system planning phase. Latest generation actuators are used to activate the valves. They are from the GEMÜ **BioStar**® series, are FDA concurrent and use stainless steel actuators. On top of their safe function, their design also ensures that they can be easily cleaned externally (QHD). The connection of the pneumatic actuators and monitoring of the valve settings is made using the GEMÜ 4222 AS-interface combi switchboxes. They are attached directly to the valve actuators and have both addressing via integrated pilot valves and end position feedback to the field bus system at their disposal. The CIP system's sterile steam feed is equipped with GEMÜ 554 angle seat globe valves.



**GEMÜ**® VALVES, MEASUREMENT  
AND CONTROL SYSTEMS

Gebr. Müller Apparatebau GmbH & Co. KG · Fritz-Müller-Str. 6-8  
D-74653 Ingelfingen · Tel. +49 (0)7940/123-0 · Fax +49 (0) 7940/123-224  
<http://www.gemue.de> · e-mail: [info@gemue.de](mailto:info@gemue.de)